NON-PUBLIC?: N
ACCESSION #: 9405030248
LICENSEE EVENT REPORT (LER)

FACILITY NAME: St. Lucie Unit 1 PAGE: 1 OF 04

DOCKET NUMBER: 05000335

TITLE: Automatic Reactor Trip caused by Manipulation of the Generator Exciter Field Breaker due to Cognitive Personnel Error
EVENT DATE: 03/28/94 LER #: 94-003-00 REPORT DATE: 04/26/94

OTHER FACILITIES INVOLVED: St Lucie 2 DOCKET NO: 05000389

OPERATING MODE: 1 POWER LEVEL: 068

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR SECTION:
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: James A. Hurchalla, Shift Technical Advisor TELEPHONE: (407) 465-3550

COMPONENT FAILURE DESCRIPTION:
CAUSE: SYSTEM: COMPONENT: MANUFACTURER:
REPORTABLE NPRDS:

SUPPLEMENTAL REPORT EXPECTED: No

ABSTRACT:

On March 28, 1994, St. Lucie Unit 1 was at 68% power for Condenser waterbox cleaning activities and Unit 2 was shutdown for a scheduled refueling outage. Utility Electrical Maintenance personnel requested a clearance for the Unit 2 main generator exciter switchgear breaker for preventive maintenance. The chief electrician requesting the clearance went to the work control center and signed on to the clearance which specified that the Unit 2 exciter breaker was in the open position. He then went to the Unit 1 exciter switchgear room and found the breaker closed . Unaware that he was on the wrong unit, the chief electrician tried to verify what he thought was the appropriate position by attempting to open the breaker. The breaker opened and Unit 1 immediately experienced a reactor trip by turbine trip. An uncomplicated automatic reactor trip was verified and Unit 1 was subsequently

stabilized in mode 3.

The root cause of the event was due to cognitive personnel error by a member of the utility Electrical Maintenance department in failure to adhere to the clearance procedure. The procedure governing clearance orders provides direction to verify deenergization of the system prior to work proceeding. Station practices restrict personnel other than Operations from manipulating in-service equipment without a valid clearance boundary. A contributing factor was the lack of an identifier on the exciter switchgear housing or the exciter field breaker.

Corrective actions included: 1) Operations stabilized the unit in mode 3. 2) The individual responsible was counseled and disciplined. 3) Reviews will be held with plant maintenance personnel to re-emphasize the foreman's responsibilities in the clearance procedure. 4) Unit 1 and Unit 2 main generator exciter switchgear housings and breakers have been labeled. 5) Additional postings to ensure unit awareness will be installed.

END OF ABSTRACT

DESCRIPTION OF THE EVENT

On March 28, 1994 St. Lucie Unit 1 was at 68% power for Condenser waterbox cleaning activities and Unit 2 was shutdown for refueling.
Utility Electrical Maintenance personnel requested a clearance on the Unit 2 Main Generator exciter switchgear breaker (EIIS: EL) for preventive maintenance. At approximately 1600 the chief electrician requesting the clearance mistakenly went to the Unit 1 exciter breaker to check that the clearance had been completed. After contacting the centralized work control center he was informed that the clearance would be completed at approximately 1800. At approximately 181 0 the chief electrician signed on to the completed clearance on the Unit 2 exciter breaker and walked from the work control center to the Unit 1 exciter switchgear, both of which are located on the mid-level of the Unit 1 turbine building. Unaware that he was on the wrong unit, the chief electrician tiled to verify what he thought was the proper breaker position by attempting to open the breaker. At 1813 he manually tripped open the breaker which resulted in an immediate loss of main generator excitation (EIIS: EL). Unit 1 experienced a main generator lockout resulting in an automatic reactor trip from loss of turbine generator load. After performing standard post-trip actions, the reactor trip was verified to be uncomplicated and the utility licensed operator control

room crew stabilized the unit in mode 3.

CAUSE OF THE EVENT

The root cause of this event was due to cognitive personnel error by a member of the utility Electrical Maintenance department in not adhering to the proper sequence of actions as delineated in OP 0010122 "In-Plant Equipment Clearance Orders". Specifically, the individual did not verify that the clearance was adequate prior to signing for acceptance of the clearance and starting work. Station practices restrict personnel other than Operations from manipulating in-service equipment without a valid clearance boundary. There was no clearance tag hanging on the Unit 1 breaker cubicle, as would be expected for a valid clearance order. The Unit 1 exciter breaker was in the closed instead of open position which should have caused the chief electrician to stop and review the clearance with the Operations department.

Interviews indicate that the individual did not feel rushed to accomplish this job nor did he become misoriented due to the common unit work control clearance center. The common work control clearance center is located in the Unit 1 turbine building. The work control center utilizes different colored paper when printing clearance orders to distinguish between the two units.

A deficiency identified in this event was the the lack of an identifying label on both the Unit 1 and Unit 2 exciter switchgear housings and the associated breaker cubicles. There were no other characteristics of the work place which contributed to this event.

ANALYSIS OF THE EVENT

This event is reportable under the requirements of 10CFR50.73.a.2.iv as "any event that resumed in a manual or automatic action of any Engineered Safety Feature."

The inadvertent breaker manipulation resulted in an uncomplicated automatic reactor trip on main turbine generator loss of load as designed. The function of this trip in the St. Lucie design basis is considered to be equipment protective and is not required for reactor safety. This event is bounded by section 15.2.7 of the St. Lucie Unit 1 Final Updated Safety Analysis Report (FUSAR) "Loss of External Electrical Load and/or Turbine Stop Valve Closure". The actual plant response was more conservative than that described in the FUSAR for several reasons: 1) The actual power level was 68% versus the FUSAR analysis assumption

of 100% power.
2) The Reactor Protection System actuated on "Loss of Load" versus "High Pressurizer Pressure" thereby minimizing the Reactor Coolant System temperature and pressure transient.
3) The primary system Code Safety Valves were not challenged due to the minimal Reactor Coolant System transient. In addition, the Pressurizer Power Operated Relief Valves were available which is not credited in the FUSAR.
4) The secondary system Main Steam Safety Valves were not challenged as the Steam Bypass Control System functioned as designed.

Therefore, the health and safety of the public were not affected by this event.

CORRECTIVE ACTIONS

1) The Unit 1 Operations control room crew stabilized the unit in mode 3.

2) The individual responsible was counseled by maintenance supervision and was disciplined for failure to adequately ensure a satisfactory clearance prior to performing work.

3) Reviews will be held with plant maintenance personnel to emphasize the foreman's responsibilities in the clearance procedure OP 0010122.

4) Unit 1 and Unit 2 main generator exciter switchgear housings and breakers have been appropriately labeled by Electrical Maintenance.

5) A review for the placement of postings to reinforce awareness of work locations has been performed by the Human Performance Enhancement System coordinator and additional signs will be installed.

ADDITIONAL INFORMATION

Failed Component Identification

None

Previous Similar Events

There are no previous Licensee Event Reports at St. Lucie plant

involving actuation of Engineered Safety Features including the Reactor Protection system due to working on the wrong unit.

ATTACHMENT TO 9405030248 PAGE 1 OF 1

P. O. Box 128, Ft. Pierce, FL 34954-0128

April 26, 1994

FPL

L-94-111
10 CFR 50.73

U. S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, D. C. 20555

Re: St. Lucie Unit 1
Docket No. 50-335
Reportable Event: 94-003
Date of Event: March 28, 1994
Automatic Reactor Trip caused by Manipulation
of the Main Generator Exciter Field Breaker
due to Cognitive Personnel Error

The attached Licensee Event Report is being submitted pursuant to the requirements of 10 CFR 50.73 to provide notification of the subject event.

Very truly yours,

D. A. Sager
Vice President
St. Lucie Plant

DAS/JWH/kw

Attachment

cc: Stewart D. Ebneter, Regional Administrator, USNRC Region II
Senior Resident Inspector, USNRC, St. Lucie Plant

DAS/PSL #1107

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